

Algebra 2 Ch. 3 Practice Test Ms. Chan

Short Answer

Solve the system by graphing.

1.
$$\begin{cases} -3x - y = -10 \\ 4x - 4y = 8 \end{cases}$$

2.
$$\begin{cases} y = -x - 9 \\ 3x - y = -11 \end{cases}$$

3.
$$\begin{cases} -2x + y + 1 = 0 \\ 4x - 2y = -2 \end{cases}$$

Without graphing, classify each system as *independent*, *dependent*, or *inconsistent*.

4.
$$\begin{cases} -2x - y = 9 \\ 3x - 4y = -8 \end{cases}$$

5.
$$\begin{cases} y = 4x + 6 \\ -8x + 2y = 12 \end{cases}$$

6.
$$\begin{cases} 12x + 3y = 12 \\ y = -4x + 5 \end{cases}$$

Solve the system by the method of substitution.

7.
$$\begin{cases} 5x - y = 5 \\ 5x - 3y = 15 \end{cases}$$

8.
$$\begin{cases} \frac{1}{2}v + w = 10 \\ \frac{2}{3}v + 4w = 8 \end{cases}$$

9.
$$\begin{cases} x + y + 3z = -4 \\ -x - y - 2z = 5 \\ 2x - z = -3 \end{cases}$$

10. A group of 52 people attended a ball game. There were three times as many children as adults in the group. Set up a system of equations that represents the numbers of adults and children who attended the game and solve the system to find the number of children who were in the group.

Use the elimination method to solve the system.

$$11. \begin{cases} -4x + 4y = -8 \\ x - 4y = -7 \end{cases}$$

$$12. \begin{cases} 5x + 3y = -6 \\ 3x - 2y = 4 \end{cases}$$

$$13. \begin{cases} 3x + 3y = -\frac{1}{4} \\ \frac{x}{3} - 2y = 1 - x \end{cases}$$

$$14. \begin{cases} -x + 2y = 10 \\ -3x + 6y = 11 \end{cases}$$

$$15. \begin{cases} x - 3y - z = -9 \\ -2x + y + 2z = 3 \\ 2x + y + 3z = 8 \end{cases}$$

$$16. \begin{cases} 2x - 2y + z = -15 \\ 6x - 3y - z = -19 \\ 3x - y - z = -6 \end{cases}$$

$$17. \begin{cases} -4x + 4y - 2z = -8 \\ -3x - y + 4z = 0 \\ 2x - 2y + 3z = -4 \end{cases}$$

Solve the system of inequalities by graphing.

$$18. \begin{cases} y \leq -3x - 1 \\ y > 3x - 2 \end{cases}$$

$$19. \begin{cases} y \geq -3x - 4 \\ y \leq \frac{1}{3}x + 1 \end{cases}$$

$$20. \begin{cases} y < x + 6 \\ 2x + y < -6 \end{cases}$$

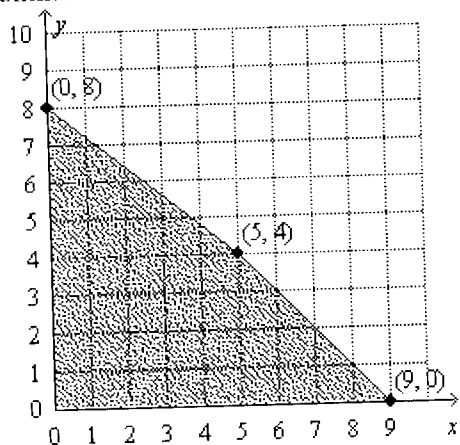
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$$21. \begin{cases} y \geq 4 \\ y > |2x + 4| \end{cases}$$

$$22. \begin{cases} y \geq 3x \\ y > |x + 2| - 3 \end{cases}$$

23. An exam consists of two parts, Section X and Section Y. There can be a maximum of 90 questions. There must be at least 5 more questions in Section Y than in Section X. Write a system of inequalities to model the number of questions in each of the two sections. Then solve the system by graphing.

24. Find the values of x and y that maximize the objective function $P = 3x + 2y$ for the graph. What is the maximum value?



25. Given the system of constraints, name all vertices. Then find the maximum value of the given objective function.

$$\begin{cases} x \geq 0 \\ y \geq 0 \\ 6x - 2y \leq 12 \\ 4y \leq 4x + 8 \end{cases}$$

Maximum for $C = 4x - 3y$